(f) Please provide the following information and attach additional sheets if necessary:

(1) Summarize the rule.

The rule requires that NH DES evaluate water use in relation to flow in designated rivers and assess these conditions in relation to a General Standard. If the Standard is not met a Water Management Plan (WMP) is required. There are currently seven WMPs that will need to be developed for segments of rivers that do not meet the General Standard. As part of the evaluation, DES will conduct a study to define the Protected Instream Flow requirements of the impacted river segments for the WMP. Under the WMP, these flows will be maintained by a combination of conservation, impoundment management, and changes in timing and rates of water use by the users. The regulated community will develop and implement conservation plans. Water users will coordinate or revise their timing or amount of withdrawals when flows do not meet the Protected Instream Flow requirements determined by the study. Instream flow protection will be added as an operation consideration of some impoundments. Impoundment operators will operate their dams, where possible, to include instream flow with flood control, recreation, and water supply as one of the purposes of the impoundment. The estimated cost of creating the seven WMPs for the segments that do not now meet the General Standard is $5.8 million. Ancillary costs for program administration and support are approximately $1.8 million over eight years for a total of $7.6 million. The draft rule text is posted on the DES website at http://www.des.state.nh.us/rivers/instream/draft_rules.htm.

(2) Is the cost associated with this rule mandated by the rule or by state statute? If the cost is mandated by statute, then the rule itself may not have a cost or benefit associated with it. Please state either the statute or chapter law that is instigating this rule.

The cost associated with the rule is mandated by statute. RSA 483 requires protected instream flows on designated rivers. The rules, required by RSA 483:9-c and RSA 483:11, IV, implement this requirement.

(3) Compare the cost of the proposed rule with the cost of the existing rule, if there is an existing rule.

There is no existing rule.

(4) Describe the costs and benefits to the state general fund which would result from this rule.

This description defines the costs, within the 8-year effective period of the proposed rules, for implementing the process of assessment, prioritization, protected instream flow study and development of the water management plan. These costs are estimated for the seven designated rivers or segments that presently do not meet the General Standards described in the rules (Merrimack—4 segments; Ashuelot, Lamprey and Exeter.) . All costs are attributed to the general fund, although other funding sources may contribute.

(a) Assume that it will require two staff persons at the Department of Environmental Services to maintain and administer the Instream Flow Rules at $80,000 per person.

Two staff @ $80,000 / year = $160,000 / year

(b) Costs are estimated to establish Protected Instream Flows and Water Management Plans for the seven river segments that do not meet the General Standards now. Plans may take more than one year to complete and more than one may be conducted simultaneously. Assume that the seven studies will be completed in eight years, and apportion the cost equally over eight years. See attached worksheets for details.

$5,798,250 / 8 years = $724,781 / year

(c) Assume that to enhance the accuracy of data procured to make determinations of low flow events, the DES will make five Stream Gage Upgrades @ $15,000 / gage. Additionally, the maintenance of each gage will be $10,900 / year / gage. Also, annualized maintenance costs assume all gages are in operation at the beginning of rules. Attached memo shows cost derivation.

Five gages @ $15,000/ gage = $75,000/ 8 years =	**$ 9,375 / year**
Maintenance of 5 gages @ $10,900 each = $436,000/ 8 years =	**$ 54,500 / year**
Total gage cost =	**$ 63,875 / year**

Total average annual cost to general fund = $948,656 / year

Total cost estimate is $7,598,250.

There will be no direct financial benefits to the general fund from the rules.

This assumes funding is made available for this purpose from the legislature. The rate of plan development will vary directly with state funding.

(5) Explain and cite the federal mandate for the proposed rule, if there is such a mandate. How would the mandate affect state funds?

There is no federal mandate for the proposed rule. However, the federal Clean Water Act authorizes states to incorporate instream flow protection into state water quality standards.

(6) Describe the cost and benefits to any state special fund which would result.

There are no costs to state special funds under these assumptions, however future costs to implement the Water Management Plans are expected. There is no estimate possible at this time for these costs. Costs may be incurred by 6 state facilities that are affected water users, and by 107 impoundments that are greater than 10 acres and are operated by the state. State funded affected water users include the University of NH, Plymouth State College, Keene State College, the Powder Mill state fish hatchery in New Durham, the state's Milford Fish Hatchery, and NH Forestry Nursery in Boscawen.

There will be no direct financial benefits to any state special fund from the rules.

(7) Describe the costs and benefits to the political subdivisions of the state.

There are no costs to political subdivisions under these assumptions, however future costs to implement the Water Management Plans are expected. There is no estimate possible at this time for implementation costs. Costs may be incurred by municipal water suppliers who make up all the affected water users that are political subdivisions of the state. There are 45 municipal or county public water suppliers that are affected water users in the seven river segments. Implementation of water management plans may require these

facilities to make infrastructure or procedural changes in the future that may have associated costs. There is no estimate possible at this time for these costs.

Effective implementation of conservation programs will reduce peak demands on water suppliers and extend for years the time before infrastructure upgrades and additional water supplies are needed. Savings associated with the delay or avoidance of upgrades, or of the need for water supply development are not calculable at this time.

(8) Describe the costs and benefits to the citizens of the state.

There are no direct costs to citizens of the state under these assumptions, however costs to implement the Water Management Plans are expected. There is no reasonable estimate possible for these costs. Indirect costs may be incurred by public water supply customers and by persons that buy products or services from businesses and industries that are AWUs due to possible future capital investment in water storage or alternate water supply.

There are no direct financial benefits to the citizens of the state. Protection of streams is a quality of life benefit whose dollar value is not calculable.

(9) Describe the costs and benefits to any independently owned business, including a description of the specific reporting and record keeping requirements upon those employing fewer than 10 employees.

There are no costs to independently owned business under these assumptions, however costs to implement the Water Management Plans are expected. There is no estimate possible at this time for these costs. There are 102 independently-owned businesses that are affected water users in the seven river segments. Costs may be incurred by private water suppliers, industrial and commercial users, and irrigators. Implementation of water management plans may require these facilities to make infrastructure or procedural changes that may have costs. No additional record keeping or reporting by businesses of any size is required by these rules.

It is not possible to estimate the financial benefit of Instream Flow Rules to independently-owned business at this time. However, tourism from river-related recreational activities is a significant source of direct and indirect revenue to small businesses of NH.

From: ktoppin@usgs.gov
Sent: Monday, October 16, 2000 4:27 PM
To: w_ives@des.state.nh.us
Subject: Funding of gages

Hi Wayne,

Your phone message regarding gage funding was forwarded to me. I have attached a fact sheet regarding the USGS cooperative water resources programs. Currently, a fully equipped and constructed gage costs about $15,000. to bring into operation for a new site. In addition, annual operation and maintenance costs currently are $10,900. per gage. We coop on a lot of the existing sites 50/50 with DES but I don't believe there is any match available for annual O+M on any new sites.

Please contact me if you need any more info.

****

Kenneth W. Toppin
USGS
361 Commerce Way
Pembroke, NH 03275

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(603) 226-7808 Voice
(603) 226-7894 FAX

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"ESTIMATED COSTS TO PREPARE WATER MANAGEMENT PLANS FOR DESIGNATED RIVERS THAT DO NOT MEET THE PROPOSED GENERAL STANDARD"

River Section Name	**1.** Establish Protected Instream Flows	**2.** Prepare a watershed-wide Consservation Plan	**3.** Logistical, Administrative and Technical Support to Local River Advisory Committiee	**4.** Water Use Plan	**5.** Impoundment Management Plan	**Total Amount**
Lower Piscataquog	*$123,000*	*$32,500*	*$20,000*	*$28,750*	*$64,000*	**$268,250**
Souhegan	*$355,000*	*$102,500*	*$20,000*	*$63,750*	*$66,750*	**$608,000**
North Branch Contoocook	*$202,000*	*$18,500*	*$20,000*	*$21,750*	*$53,000*	**$315,250**
Contoocook-Henniker	*$290,000*	*$134,000*	*$20,000*	*$79,500*	*$141,000*	**$664,500**
Lower Merrimack	*$137,000*	*$788,500*	*$20,000*	*$406,750*	*$550,750*	**$1,903,000**
Upper Ashuelot	*$402,000*	*$18,500*	*$20,000*	*$21,750*	*$55,750*	**$518,000**
Middle Ashuelot	*$40,000*	*$71,000*	*$20,000*	*$48,000*	*$58,500*	**$237,500**
Lower Ashuelot	*$271,000*	*$64,000*	*$20,000*	*$44,500*	*$72,250*	**$471,750**
Lamprey	*$135,000*	*$32,500*	*$20,000*	*$28,750*	*$72,250*	**$288,500**
Exeter	*$385,000*	*$50,000*	*$20,000*	*$37,500*	*$31,000*	**$523,500**
TOTAL	*$2,340,000*	*$1,312,000*	*$200,000*	*$781,000*	*$1,165,250*	**$5,798,250**

PLANNING COST ESTIMATE FOR A WATER MANAGEMENT PLAN
LOWER PISCATAQUOG

	Units	# of Units	Cost/ unit	TOTAL COST
1. ESTABLISH PROTECTED INSTREAM FLOWS				
A. Identify critical reaches and resources in designated reaches Review water quality standards, river nomination, river corridor management plan and generate a detailed list	Lump sum	1	$5,000	$5,000
B. River survey Survey of instream resources, including fish, macroinvertebrates, recreational use, and other things identified in A	Lump sum	1	$10,000	$10,000
C. Protected Instream Flow analysis Prepare a river reach-specific analysis of flow requirements to support critical resources identified in A. and B. Includes PHABSIM for fish, or other detailed model analysis.	River mile	10.8	$10,000	$108,000
	Sub Total			*$123,000*
2. PREPARE A WATERSHED-WIDE CONSERVATION PLAN				
A. Develop conservation measures by user class Collect information on types of water user in the watershed, and conduct a literature search of conservation measures and best management practices applicable to each type of user	Lump sum	1	$15,000	$15,000
B. Collect water use data and information Collect all information available at DES, then conduct site visits and interviews with each water user and write a report of their water use patterns, needs, and potential for conservation.	Registered water user: 30hours/ user @ $50/ hr.	5	$1,500	$7,500
C. Negotiate conservation measures with users Develop a conservation implementation plan and quantitative water use reduction targets for each water user.	Registered water user: 40hours/ user @ $50/ hr.	5	$2,000	$10,000
	Sub Total			*$32,500*
3. LOGISTICAL , ADMINISTRATIVE, AND TECHNICAL SUPPORT TO LOCAL RIVER ADVISORY COMMITTEE				
A. Public meetings and mailings or other public notices	Each	10	$1,000	$10,000
B. Technical support - presentations of concepts and plan progress	Each	5	$2,000	$10,000
	Sub Total			*$20,000*
4. WATER USE PLAN				
A. Collect water use data and information Collect all information available at DES, then conduct site visits and interviews with each water user and write a report of their water use patterns, needs, and potential for reduction/sharing in times of scarcity	Registered water user: 15hours/ user @ $50/ hr.	5	$750	$3,750
B. Mediate negotiations among water users Present instream flow requirements to users, and guide negotiations. Prepare and revise draft water use plans for each user based on progress of negotiations	Registered water user: 20hours/ user @ $50/ hr.	5	$1,000	$5,000
C. Prepare comprehensive water use plan document	Lump sum	1	$20,000	$20,000
	Sub Total			*$28,750*
5. IMPOUNDMENT MANAGEMENT PLAN				
A. Collect information dam characteristics and operation Collect all information available at DES, then conduct site visits and interviews with each impoundment owner and write a report of their operation patterns, needs, and potential for water management for release in times of scarcity	Dam owner: 15hours/ owner @ $50/ hr.	16	$750	$12,000
B. Mediate negotiations among dam owners and water users Present instream flow requirements to dam owners, and guide negotiations. Suggest interactive management options among dam owners and water users. Prepare and revise draft dam operation plans for each dam based on progress of negotiations	Dam owner: 40hours/ owner @ $50/ hr.	16	$2,000	$32,000
C. Prepare comprehensive impoundment management plan document	Lump sum	1	$20,000	$20,000
	Sub Total			*$64,000*
	TOTAL			**$268,250**

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PLANNING COST ESTIMATE FOR A WATER MANAGEMENT PLAN
SOUHEGAN

	Units	# of Units	Cost/ unit	TOTAL COST
1. ESTABLISH PROTECTED INSTREAM FLOWS				
A. Identify critical reaches and resources Review water quality standards, river nomination, river corridor management plan and generate a detailed list	Lump sum	1	$5,000	$5,000
B. River survey Survey of instream resources, including fish, macroinvertebrates, recreational use, and other things identified in A	Lump sum	1	$10,000	$10,000
C. Protected Instream Flow analysis Prepare a river reach-specific analysis of flow requirements to support critical resources identified in A. and B. Includes PHABSIM for fish, or other detailed model analysis.	River mile	34	$10,000	$340,000
	Sub Total			*$355,000*
2. PREPARE A WATERSHED-WIDE CONSERVATION PLAN				
A. Develop conservation measures by user class Collect information on types of water user in the watershed, and conduct a literature search of conservation measures and best management practices applicable to each type of user	Lump sum	1	$15,000	$15,000
B. Collect water use data and information Collect all information available at DES, then conduct site visits and interviews with each water user and write a report of their water use patterns, needs, and potential for conservation.	Registered water user: 30hours/ user @ $50/ hr.	25	$1,500	$37,500
C. Negotiate conservation measures with users Develop a conservation implementation plan and quantitative water use reduction targets for each water user.	Registered water user: 40hours/ user @ $50/	25	$2,000	$50,000
	Sub Total			*$102,500*
3. LOGISTICAL , ADMINISTRATIVE, AND TECHNICAL SUPPORT TO LOCAL RIVER ADVISORY COMMITTEE				
A. Public meeting logistics and mailings or other public notices	Each	10	$1,000	$10,000
B. Technical support - presentations of concepts and plan progress	Each	5	$2,000	$10,000
	Sub Total			*$20,000*
4. WATER USE PLAN				
A. Collect water use data and information Collect all information available at DES, then conduct site visits and interviews with each water user and write a report of their water use patterns, needs, and potential for reduction/sharing in times of scarcity	Registered water user: 15hours/ user @ $50/ hr.	25	$750	$18,750
B. Mediate negotiations among water users Present instream flow requirements to users, and guide negotiations. Prepare and revise draft water use plans for each user based on progress of negotiations	Registered water user: 20hours/ user @ $50/ hr.	25	$1,000	$25,000
C. Prepare comprehensive water use plan document	Lump sum	1	$20,000	$20,000
	Sub Total			*$63,750*
5. IMPOUNDMENT MANAGEMENT PLAN				
A. Collect information dam characteristics and operation Collect all information available at DES, then conduct site visits and interviews with each impoundment owner and write a report of their operation patterns, needs, and potential for water management for release in times of	Dam owner: 15hours/ owner @ $50/ hr.	17	$750	$12,750
B. Mediate negotiations among dam owners and water users Present instream flow requirements to dam owners, and guide negotiations. Suggest interactive management options among dam owners and water users. Prepare and revise draft dam operation plans for each dam based on progress of negotiations	Dam owner: 40hours/ owner @ $50/ hr.	17	$2,000	$34,000
C. Prepare comprehensive impoundment management plan document	Lump sum	1	$20,000	$20,000
	Sub Total			*$66,750*
	TOTAL			**$608,000**

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PLANNING COST ESTIMATE FOR A WATER MANAGEMENT PLAN
NORTH BRANCH CONTOOCOOK

	Units	# of Units	Cost/ unit	TOTAL COST
1. ESTABLISH PROTECTED INSTREAM FLOWS				
A. Identify critical reaches and resources Review water quality standards, river nomination, river corridor management plan and generate a detailed list	Lump sum	1	$5,000	$5,000
B. River survey Survey of instream resources, including fish, macroinvertebrates, recreational use, and other things identified in A	Lump sum	1	$10,000	$10,000
C. Protected Instream Flow analysis Prepare a river reach-specific analysis of flow requirements to support critical resources identified in A. and B. Includes PHABSIM for fish, or other detailed model analysis.	River mile	18.7	$10,000	$187,000
	Sub Total			*$202,000*
2. PREPARE A WATERSHED-WIDE CONSERVATION PLAN				
A. Develop conservation measures by user class Collect information on types of water user in the watershed, and conduct a literature search of conservation measures and best management practices applicable to each type of user	Lump sum	1	$15,000	$15,000
B. Collect water use data and information Collect all information available at DES, then conduct site visits and interviews with each water user and write a report of their water use patterns, needs, and potential for conservation.	Registered water user: 30hours/ user @ $50/ hr.	1	$1,500	$1,500
C. Negotiate conservation measures with users Develop a conservation implementation plan and quantitative water use reduction targets for each water user.	Registered water user: 40hours/ user @ $50/ hr.	1	$2,000	$2,000
	Sub Total			*$18,500*
3. LOGISTICAL , ADMINISTRATIVE, AND TECHNICAL SUPPORT TO LOCAL RIVER ADVISORY COMMITTEE				
A. Public meeting logistics and mailings or other public notices	Each	10	$1,000	$10,000
B. Technical support - presentations of concepts and plan progress	Each	5	$2,000	$10,000
	Sub Total			*$20,000*
4. WATER USE PLAN				
A. Collect water use data and information Collect all information available at DES, then conduct site visits and interviews with each water user and write a report of their water use patterns, needs, and potential for reduction/sharing in times of scarcity	Registered water user: 15hours/ user @ $50/ hr.	1	$750	$750
B. Mediate negotiations among water users Present instream flow requirements to users, and guide negotiations. Prepare and revise draft water use plans for each user based on progress of negotiations	Registered water user: 20hours/ user @ $50/ hr.	1	$1,000	$1,000
C. Prepare comprehensive water use plan document	Lump sum	1	$20,000	$20,000
	Sub Total			*$21,750*
5. IMPOUNDMENT MANAGEMENT PLAN				
A. Collect information dam characteristics and operation Collect all information available at DES, then conduct site visits and interviews with each impoundment owner and write a report of their operation patterns, needs, and potential for water management for release in times of scarcity	Dam owner: 15hours/ owner @ $50/ hr.	12	$750	$9,000
B. Mediate negotiations among dam owners and water users Present instream flow requirements to dam owners, and guide negotiations. Suggest interactive management options among dam owners and water users. Prepare and revise draft dam operation plans for each dam based on progress of negotiations	Dam owner: 40hours/ owner @ $50/ hr.	12	$2,000	$24,000
C. Prepare comprehensive impoundment management plan document	Lump sum	1	$20,000	$20,000
	Sub Total			*$53,000*
	TOTAL			**$315,250**

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PLANNING COST ESTIMATE FOR A WATER MANAGEMENT PLAN
CONTOOCOOK RIVER, HENNIKER

	Units	# of Units	Cost/ unit	TOTAL COST
1. ESTABLISH PROTECTED INSTREAM FLOWS				
A. Identify critical reaches and resources Review water quality standards, river nomination, river corridor management plan and generate a detailed list	Lump sum	1	$5,000	$5,000
B. River survey Survey of instream resources, including fish, macroinvertebrates, recreational use, and other things identified in A	Lump sum	1	$10,000	$10,000
C. Protected Instream Flow analysis Prepare a river reach-specific analysis of flow requirements to support critical resources identified in A. and B. Includes PHABSIM for fish, or other detailed model analysis.	River mile	27.5	$10,000	$275,000
	Sub Total			*$290,000*
2. PREPARE A WATERSHED-WIDE CONSERVATION PLAN				
A. Develop conservation measures by user class Collect information on types of water user in the watershed, and conduct a literature search of conservation measures and best management practices applicable to each type of user	Lump sum	1	$15,000	$15,000
B. Collect water use data and information Collect all information available at DES, then conduct site visits and interviews with each water user and write a report of their water use patterns, needs, and potential for conservation.	Registered water user: 30hours/ user @ $50/ hr.	34	$1,500	$51,000
C. Negotiate conservation measures with users Develop a conservation implementation plan and quantitative water use reduction targets for each water user.	Registered water user: 40hours/ user @ $50/ hr.	34	$2,000	$68,000
	Sub Total			*$134,000*
3. LOGISTICAL , ADMINISTRATIVE, AND TECHNICAL SUPPORT TO LOCAL RIVER ADVISORY COMMITTEE				
A. Public meeting logistics and mailings or other public notices	Each	10	$1,000	$10,000
B. Technical support - presentations of concepts and plan progress	Each	5	$2,000	$10,000
	Sub Total			*$20,000*
4. WATER USE PLAN				
A. Collect water use data and information Collect all information available at DES, then conduct site visits and interviews with each water user and write a report of their water use patterns, needs, and potential for reduction/sharing in times of scarcity	Registered water user: 15hours/ user @ $50/ hr.	34	$750	$25,500
B. Mediate negotiations among water users Present instream flow requirements to users, and guide negotiations. Prepare and revise draft water use plans for each user based on progress of negotiations	Registered water user: 20hours/ user @ $50/ hr.	34	$1,000	$34,000
C. Prepare comprehensive water use plan document	Lump sum	1	$20,000	$20,000
	Sub Total			*$79,500*
5. IMPOUNDMENT MANAGEMENT PLAN				
A. Collect information dam characteristics and operation Collect all information available at DES, then conduct site visits and interviews with each impoundment owner and write a report of their operation patterns, needs, and potential for water management for release in times of scarcity	Dam owner: 15hours/ owner @ $50/ hr.	44	$750	$33,000
B. Mediate negotiations among dam owners and water users Present instream flow requirements to dam owners, and guide negotiations. Suggest interactive management options among dam owners and water users. Prepare and revise draft dam operation plans for each dam based on progress of negotiations	Dam owner: 40hours/ owner @ $50/ hr.	44	$2,000	$88,000
C. Prepare comprehensive impoundment management plan document	Lump sum	1	$20,000	$20,000
	Sub Total			*$141,000*
	TOTAL			**$664,500**

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PLANNING COST ESTIMATE FOR A WATER MANAGEMENT PLAN
LOWER MERRIMACK

	Units	# of Units	Cost/ unit	TOTAL COST
1. ESTABLISH PROTECTED INSTREAM FLOWS				
A. Identify critical reaches and resources Review water quality standards, river nomination, river corridor management plan and generate a detailed list	Lump sum	1	$5,000	$5,000
B. River survey Survey of instream resources, including fish, macroinvertebrates, recreational use, and other things identified in A	Lump sum	1	$10,000	$10,000
C. Protected Instream Flow analysis Prepare a river reach-specific analysis of flow requirements to support critical resources identified in A. and B. Includes PHABSIM for fish, or other detailed model analysis.	River mile	12.2	$10,000	$122,000
	Sub Total			*$137,000*
2. PREPARE A WATERSHED-WIDE CONSERVATION PLAN				
A. Develop conservation measures by user class Collect information on types of water user in the watershed, and conduct a literature search of conservation measures and best management practices applicable to each type of user	Lump sum	1	$15,000	$15,000
B. Collect water use data and information Collect all information available at DES, then conduct site visits and interviews with each water user and write a report of their water use patterns, needs, and potential for conservation.	Registered water user: 30hours/ user @ $50/ hr.	221	$1,500	$331,500
C. Negotiate conservation measures with users Develop a conservation implementation plan and quantitative water use reduction targets for each water user.	Registered water user: 40hours/ user @ $50/ hr.	221	$2,000	$442,000
	Sub Total			*$788,500*
3. LOGISTICAL , ADMINISTRATIVE, AND TECHNICAL SUPPORT TO LOCAL RIVER ADVISORY COMMITTEE				
A. Public meeting logistics and mailings or other public notices	Each	10	$1,000	$10,000
B. Technical support - presentations of concepts and plan progress	Each	5	$2,000	$10,000
	Sub Total			*$20,000*
4. WATER USE PLAN				
A. Collect water use data and information Collect all information available at DES, then conduct site visits and interviews with each water user and write a report of their water use patterns, needs, and potential for reduction/sharing in times of scarcity	Registered water user: 15hours/ user @ $50/ hr.	221	$750	$165,750
B. Mediate negotiations among water users Present instream flow requirements to users, and guide negotiations. Prepare and revise draft water use plans for each user based on progress of negotiations	Registered water user: 20hours/ user @ $50/ hr.	221	$1,000	$221,000
C. Prepare comprehensive water use plan document	Lump sum	1	$20,000	$20,000
	Sub Total			*$406,750*
5. IMPOUNDMENT MANAGEMENT PLAN				
A. Collect information dam characteristics and operation Collect all information available at DES, then conduct site visits and interviews with each impoundment owner and write a report of their operation patterns, needs, and potential for water management for release in times of scarcity	Dam owner: 15hours/ owner @ $50/ hr.	193	$750	$144,750
B. Mediate negotiations among dam owners and water users Present instream flow requirements to dam owners, and guide negotiations. Suggest interactive management options among dam owners and water users. Prepare and revise draft dam operation plans for each dam based on progress of negotiations	Dam owner: 40hours/ owner @ $50/ hr.	193	$2,000	$386,000
C. Prepare comprehensive impoundment management plan document	Lump sum	1	$20,000	$20,000
	Sub Total			*$550,750*
	TOTAL			**$1,903,000**

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PLANNING COST ESTIMATE FOR A WATER MANAGEMENT PLAN
UPPER ASHUELOT

	Units	# of Units	Cost/ unit	TOTAL COST
1. ESTABLISH PROTECTED INSTREAM FLOWS				
A. Identify critical reaches and resources Review water quality standards, river nomination, river corridor management plan and generate a detailed list	Lump sum	1	$5,000	$5,000
B. River survey Survey of instream resources, including fish, macroinvertebrates, recreational use, and other things identified in A	Lump sum	1	$10,000	$10,000
C. Protected Instream Flow analysis Prepare a river reach-specific analysis of flow requirements to support critical resources identified in A. and B. Includes PHABSIM for fish, or other detailed model analysis.	River mile	38.7	$10,000	$387,000
	Sub Total			*$402,000*
2. PREPARE A WATERSHED-WIDE CONSERVATION PLAN				
A. Develop conservation measures by user class Collect information on types of water user in the watershed, and conduct a literature search of conservation measures and best management practices applicable to each type of user	Lump sum	1	$15,000	$15,000
B. Collect water use data and information Collect all information available at DES, then conduct site visits and interviews with each water user and write a report of their water use patterns, needs, and potential for conservation.	Registered water user: 30hours/ user @ $50/ hr.	1	$1,500	$1,500
C. Negotiate conservation measures with users Develop a conservation implementation plan and quantitative water use reduction targets for each water user.	Registered water user: 40hours/ user @ $50/ hr.	1	$2,000	$2,000
	Sub Total			*$18,500*
3. LOGISTICAL , ADMINISTRATIVE, AND TECHNICAL SUPPORT TO LOCAL RIVER ADVISORY COMMITTEE				
A. Public meeting logistics and mailings or other public notices	Each	10	$1,000	$10,000
B. Technical support - presentations of concepts and plan progress	Each	5	$2,000	$10,000
	Sub Total			*$20,000*
4. WATER USE PLAN				
A. Collect water use data and information Collect all information available at DES, then conduct site visits and interviews with each water user and write a report of their water use patterns, needs, and potential for reduction/sharing in times of scarcity	Registered water user: 15hours/ user @ $50/ hr.	1	$750	$750
B. Mediate negotiations among water users Present instream flow requirements to users, and guide negotiations. Prepare and revise draft water use plans for each user based on progress of negotiations	Registered water user: 20hours/ user @ $50/ hr.	1	$1,000	$1,000
C. Prepare comprehensive water use plan document	Lump sum	1	$20,000	$20,000
	Sub Total			*$21,750*
5. IMPOUNDMENT MANAGEMENT PLAN				
A. Collect information dam characteristics and operation Collect all information available at DES, then conduct site visits and interviews with each impoundment owner and write a report of their operation patterns, needs, and potential for water management for release in times of scarcity	Dam owner: 15hours/ owner @ $50/ hr.	13	$750	$9,750
B. Mediate negotiations among dam owners and water users Present instream flow requirements to dam owners, and guide negotiations. Suggest interactive management options among dam owners and water users. Prepare and revise draft dam operation plans for each dam based on progress of negotiations	Dam owner: 40hours/ owner @ $50/ hr.	13	$2,000	$26,000
C. Prepare comprehensive impoundment management plan document	Lump sum	1	$20,000	$20,000
	Sub Total			*$55,750*
	TOTAL			**$518,000**

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PLANNING COST ESTIMATE FOR A WATER MANAGEMENT PLAN
MIDDLE ASHUELOT

	Units	# of Units	Cost/ unit	TOTAL COST
1. ESTABLISH PROTECTED INSTREAM FLOWS				
A. Identify critical reaches and resources Review water quality standards, river nomination, river corridor management plan and generate a detailed list	Lump sum	1	$5,000	$5,000
B. River survey Survey of instream resources, including fish, macroinvertebrates, recreational use, and other things identified in A	Lump sum	1	$10,000	$10,000
C. Protected Instream Flow analysis Prepare a river reach-specific analysis of flow requirements to support critical resources identified in A. and B. Includes PHABSIM for fish, or other detailed model analysis.	River mile	2.5	$10,000	$25,000
	Sub Total			*$40,000*
2. PREPARE A WATERSHED-WIDE CONSERVATION PLAN				
A. Develop conservation measures by user class Collect information on types of water user in the watershed, and conduct a literature search of conservation measures and best management practices applicable to each type of user	Lump sum	1	$15,000	$15,000
B. Collect water use data and information Collect all information available at DES, then conduct site visits and interviews with each water user and write a report of their water use patterns, needs, and potential for conservation.	Registered water user: 30hours/ user @ $50/ hr.	16	$1,500	$24,000
C. Negotiate conservation measures with users Develop a conservation implementation plan and quantitative water use reduction targets for each water user.	Registered water user: 40hours/ user @ $50/ hr.	16	$2,000	$32,000
	Sub Total			*$71,000*
3. LOGISTICAL , ADMINISTRATIVE, AND TECHNICAL SUPPORT TO LOCAL RIVER ADVISORY COMMITTEE				
A. Public meeting logistics and mailings or other public notices	Each	10	$1,000	$10,000
B. Technical support - presentations of concepts and plan progress	Each	5	$2,000	$10,000
	Sub Total			*$20,000*
4. WATER USE PLAN				
A. Collect water use data and information Collect all information available at DES, then conduct site visits and interviews with each water user and write a report of their water use patterns, needs, and potential for reduction/sharing in times of scarcity	Registered water user: 15hours/ user @ $50/ hr.	16	$750	$12,000
B. Mediate negotiations among water users Present instream flow requirements to users, and guide negotiations. Prepare and revise draft water use plans for each user based on progress of negotiations	Registered water user: 20hours/ user @ $50/ hr.	16	$1,000	$16,000
C. Prepare comprehensive water use plan document	Lump sum	1	$20,000	$20,000
	Sub Total			*$48,000*
5. IMPOUNDMENT MANAGEMENT PLAN				
A. Collect information dam characteristics and operation Collect all information available at DES, then conduct site visits and interviews with each impoundment owner and write a report of their operation patterns, needs, and potential for water management for release in times of scarcity	Dam owner: 15hours/ owner @ $50/ hr.	14	$750	$10,500
B. Mediate negotiations among dam owners and water users Present instream flow requirements to dam owners, and guide negotiations. Suggest interactive management options among dam owners and water users. Prepare and revise draft dam operation plans for each dam based on progress of negotiations	Dam owner: 40hours/ owner @ $50/ hr.	14	$2,000	$28,000
C. Prepare comprehensive impoundment management plan document	Lump sum	1	$20,000	$20,000
	Sub Total			*$58,500*
	TOTAL			**$237,500**

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PLANNING COST ESTIMATE FOR A WATER MANAGEMENT PLAN
LOWER ASHUELOT

	Units	# of Units	Cost/ unit	TOTAL COST
1. ESTABLISH PROTECTED INSTREAM FLOWS				
A. Identify critical reaches and resources Review water quality standards, river nomination, river corridor management plan and generate a detailed list	Lump sum	1	$5,000	$5,000
B. River survey Survey of instream resources, including fish, macroinvertebrates, recreational use, and other things identified in A	Lump sum	1	$10,000	$10,000
C. Protected Instream Flow analysis Prepare a river reach-specific analysis of flow requirements to support critical resources identified in A. and B. Includes PHABSIM for fish, or other detailed model analysis.	River mile	25.6	$10,000	$256,000
	Sub Total			*$271,000*
2. PREPARE A WATERSHED-WIDE CONSERVATION PLAN				
A. Develop conservation measures by user class Collect information on types of water user in the watershed, and conduct a literature search of conservation measures and best management practices applicable to each type of user	Lump sum	1	$15,000	$15,000
B. Collect water use data and information Collect all information available at DES, then conduct site visits and interviews with each water user and write a report of their water use patterns, needs, and potential for conservation.	Registered water user: 30hours/ user @ $50/ hr.	14	$1,500	$21,000
C. Negotiate conservation measures with users Develop a conservation implementation plan and quantitative water use reduction targets for each water user.	Registered water user: 40hours/ user @ $50/ hr.	14	$2,000	$28,000
	Sub Total			*$64,000*
3. LOGISTICAL , ADMINISTRATIVE, AND TECHNICAL SUPPORT TO LOCAL RIVER ADVISORY COMMITTEE				
A. Public meeting logistics and mailings or other public notices	Each	10	$1,000	$10,000
B. Technical support - presentations of concepts and plan progress	Each	5	$2,000	$10,000
	Sub Total			*$20,000*
4. WATER USE PLAN				
A. Collect water use data and information Collect all information available at DES, then conduct site visits and interviews with each water user and write a report of their water use patterns, needs, and potential for reduction/sharing in times of scarcity	Registered water user: 15hours/ user @ $50/ hr.	14	$750	$10,500
B. Mediate negotiations among water users Present instream flow requirements to users, and guide negotiations. Prepare and revise draft water use plans for each user based on progress of negotiations	Registered water user: 20hours/ user @ $50/ hr.	14	$1,000	$14,000
C. Prepare comprehensive water use plan document	Lump sum	1	$20,000	$20,000
	Sub Total			*$44,500*
5. IMPOUNDMENT MANAGEMENT PLAN				
A. Collect information dam characteristics and operation Collect all information available at DES, then conduct site visits and interviews with each impoundment owner and write a report of their operation patterns, needs, and potential for water management for release in times of scarcity	Dam owner: 15hours/ owner @ $50/ hr.	19	$750	$14,250
B. Mediate negotiations among dam owners and water users Present instream flow requirements to dam owners, and guide negotiations. Suggest interactive management options among dam owners and water users. Prepare and revise draft dam operation plans for each dam based on progress of negotiations	Dam owner: 40hours/ owner @ $50/ hr.	19	$2,000	$38,000
C. Prepare comprehensive impoundment management plan document	Lump sum	1	$20,000	$20,000
	Sub Total			*$72,250*
	TOTAL			**$471,750**

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PLANNING COST ESTIMATE FOR A WATER MANAGEMENT PLAN
LAMPREY

	Units	# of Units	Cost/ unit	TOTAL COST
1. ESTABLISH PROTECTED INSTREAM FLOWS				
A. Identify critical reaches and resources Review water quality standards, river nomination, river corridor management plan and generate a detailed list	Lump sum	1	$5,000	$5,000
B. River survey Survey of instream resources, including fish, macroinvertebrates, recreational use, and other things identified in A	Lump sum	1	$10,000	$10,000
C. Protected Instream Flow analysis Prepare a river reach-specific analysis of flow requirements to support critical resources identified in A. and B. Includes PHABSIM for fish, or other detailed model analysis.	River mile	12	$10,000	$120,000
	Sub Total			*$135,000*
2. PREPARE A WATERSHED-WIDE CONSERVATION PLAN				
A. Develop conservation measures by user class Collect information on types of water user in the watershed, and conduct a literature search of conservation measures and best management practices applicable to each type of user	Lump sum	1	$15,000	$15,000
B. Collect water use data and information Collect all information available at DES, then conduct site visits and interviews with each water user and write a report of their water use patterns, needs, and potential for conservation.	Registered water user: 30hours/ user @ $50/ hr.	5	$1,500	$7,500
C. Negotiate conservation measures with users Develop a conservation implementation plan and quantitative water use reduction targets for each water user.	Registered water user: 40hours/ user @ $50/ hr.	5	$2,000	$10,000
	Sub Total			*$32,500*
3. LOGISTICAL , ADMINISTRATIVE, AND TECHNICAL SUPPORT TO LOCAL RIVER ADVISORY COMMITTEE				
A. Public meeting logistics and mailings or other public notices	Each	10	$1,000	$10,000
B. Technical support - presentations of concepts and plan progress	Each	5	$2,000	$10,000
	Sub Total			*$20,000*
4. WATER USE PLAN				
A. Collect water use data and information Collect all information available at DES, then conduct site visits and interviews with each water user and write a report of their water use patterns, needs, and potential for reduction/sharing in times of scarcity	Registered water user: 15hours/ user @ $50/ hr.	5	$750	$3,750
B. Mediate negotiations among water users Present instream flow requirements to users, and guide negotiations. Prepare and revise draft water use plans for each user based on progress of negotiations	Registered water user: 20hours/ user @ $50/ hr.	5	$1,000	$5,000
C. Prepare comprehensive water use plan document	Lump sum	1	$20,000	$20,000
	Sub Total			*$28,750*
5. IMPOUNDMENT MANAGEMENT PLAN				
A. Collect information dam characteristics and operation Collect all information available at DES, then conduct site visits and interviews with each impoundment owner and write a report of their operation patterns, needs, and potential for water management for release in times of scarcity	Dam owner: 15hours/ owner @ $50/ hr.	19	$750	$14,250
B. Mediate negotiations among dam owners and water users Present instream flow requirements to dam owners, and guide negotiations. Suggest interactive management options among dam owners and water users. Prepare and revise draft dam operation plans for each dam based on progress of negotiations	Dam owner: 40hours/ owner @ $50/ hr.	19	$2,000	$38,000
C. Prepare comprehensive impoundment management plan document	Lump sum	1	$20,000	$20,000
	Sub Total			*$72,250*
	TOTAL			**$288,500**

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PLANNING COST ESTIMATE FOR A WATER MANAGEMENT PLAN
EXETER

	Units	# of Units	Cost/ unit	TOTAL COST
1. ESTABLISH PROTECTED INSTREAM FLOWS				
A. Identify critical reaches and resources Review water quality standards, river nomination, river corridor management plan and generate a detailed list	Lump sum	1	$5,000	$5,000
B. River survey Survey of instream resources, including fish, macroinvertebrates, recreational use, and other things identified in A	Lump sum	1	$10,000	$10,000
C. Protected Instream Flow analysis Prepare a river reach-specific analysis of flow requirements to support critical resources identified in A. and B. Includes PHABSIM for fish, or other detailed model analysis.	River mile	37	$10,000	$370,000
	Sub Total			*$385,000*
2. PREPARE A WATERSHED-WIDE CONSERVATION PLAN				
A. Develop conservation measures by user class Collect information on types of water user in the watershed, and conduct a literature search of conservation measures and best management practices applicable to each type of user	Lump sum	1	$15,000	$15,000
B. Collect water use data and information Collect all information available at DES, then conduct site visits and interviews with each water user and write a report of their water use patterns, needs, and potential for conservation.	Registered water user: 30hours/ user @ $50/ hr.	10	$1,500	$15,000
C. Negotiate conservation measures with users Develop a conservation implementation plan and quantitative water use reduction targets for each water user.	Registered water user: 40hours/ user @ $50/ hr.	10	$2,000	$20,000
	Sub Total			*$50,000*
3. LOGISTICAL , ADMINISTRATIVE, AND TECHNICAL SUPPORT TO LOCAL RIVER ADVISORY COMMITTEE				
A. Public meeting logistics and mailings or other public notices	Each	10	$1,000	$10,000
B. Technical support - presentations of concepts and plan progress	Each	5	$2,000	$10,000
	Sub Total			*$20,000*
4. WATER USE PLAN				
A. Collect water use data and information Collect all information available at DES, then conduct site visits and interviews with each water user and write a report of their water use patterns, needs, and potential for reduction/sharing in times of scarcity	Registered water user: 15hours/ user @ $50/ hr.	10	$750	$7,500
B. Mediate negotiations among water users Present instream flow requirements to users, and guide negotiations. Prepare and revise draft water use plans for each user based on progress of negotiations	Registered water user: 20hours/ user @ $50/ hr.	10	$1,000	$10,000
C. Prepare comprehensive water use plan document	Lump sum	1	$20,000	$20,000
	Sub Total			*$37,500*
5. IMPOUNDMENT MANAGEMENT PLAN				
A. Collect information dam characteristics and operation Collect all information available at DES, then conduct site visits and interviews with each impoundment owner and write a report of their operation patterns, needs, and potential for water management for release in times of scarcity	Dam owner: 15hours/ owner @ $50/ hr.	4	$750	$3,000
B. Mediate negotiations among dam owners and water users Present instream flow requirements to dam owners, and guide negotiations. Suggest interactive management options among dam owners and water users. Prepare and revise draft dam operation plans for each dam based on progress of negotiations	Dam owner: 40hours/ owner @ $50/ hr.	4	$2,000	$8,000
C. Prepare comprehensive impoundment management plan document	Lump sum	1	$20,000	$20,000
	Sub Total			*$31,000*
	TOTAL			**$523,500**

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